

### **REMARKS**

Claims 1-25 are pending in this application. Claims 1-23 have been amended in several particulars for purposes of clarity and brevity that are unrelated to patentability and prior art rejections while Claims 24-25 have been newly added in accordance with current Office policy, to further and alternatively define Applicants' disclosed invention and to assist the Examiner to expedite compact prosecution of the instant application.

Claim 3 have been conditionally allowed if rewritten in independent form to include all of the limitations of its base claim 1. The Examiner's indication of allowability of claim 3 is noted with appreciation. For purposes of expedition, claims 24-25 have been added to alternatively define the features of claim 3 over the prior art of record. These newly formulated claims 24-25 are believed to be in condition for allowance. As for claim 3, forbearance is respectfully requested pending Applicants' traversal of the outstanding rejection of base claim 1.

As a preliminary matter, Applicants also note that Nakata, U.S. Patent No. 6,355,570 is Applicants' earlier work product that is also assigned to the same assignee of the instant application, and that has a common co-pending term. Such a reference does **not** qualify as prior art against Applicants' claimed invention under 35 U.S.C. §102(e) because such reference, as indicated, is Applicants' earlier work product that was filed in the USPTO on March 2, 1999, and subsequently published on March 12, 2002, more than a year after the filing date of January 17, 2001 of Applicants' disclosure, and is **not** authored by "another" entity as required by 35 U.S.C. §102(e), as well as under 35 U.S.C. §103© because that subject mater and

Applicants' claimed invention "were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person."

The drawings have been also objected to because FIGs. 28 and 32 are not designated by a legend such as "Prior Art." This objection is also incorrect, however. FIGs. 28 and 32 are not believed to constitute "prior art" as that term is defined by either 35 U.S.C. §102 or 35 U.S.C. §103. Rather, these drawings are simply abstract representations of the art prepared by Applicants in an effort to illustrate Applicants' discovery of problems plagued in the art; this discovery is itself, together with Applicants' abstraction of the art represented by FIGs. 28 and 32, part of Applicants' invention. The figures are therefore, Applicants' work products and Applicants' effort to describe his invention in terms of both the problems which have plagued in the art and which Applicants have addressed with the inventions defined by the claims. In view of these explanations, Applicants again trust that the objection will be withdrawn.

The drawings have been objected to under 37 C.F.R. §1.84(p)(5) for failing to show FIGs. 28A-28B and FIGs. 29A-29B as described on pages 13-14 of the specification. Actually, the drawings are correct. However, the specification has incorrectly referred to FIGs. 28 and 29 as FIGs. 28A-28B and FIGs. 29A-29B. Accordingly, the specification has been amended to refer to FIG. 28 and FIG. 29 in order to overcome this objection.

The drawings have also been objected to because FIG. 24 has several boxes without reference numbers or labels. In response thereto, FIG. 24 has been revised to label the signal generator 83, the power amp 84 and the distributor 85, as shown

in FIG. 1, FIG. 6, FIG. 9, FIG. 11, FIG. 13, FIG. 15, and FIG. 28. Accordingly, in view of these corrections, Applicants trust that the objection will be withdrawn.

The Abstract of the disclosure, as filed in the Preliminary Amendment on July 31, 2001, has been objected to for containing too long a sentence. Actually, the Abstract was written less than 25 lines/250 words as required by 37 C.F.R. §1.72(b) to describe a method of processing a semiconductor device. The steps provided in such a method are not overly lengthy as alleged by the Examiner. Moreover, the provision under 37 C.F.R. §1.72(b) only requires the Abstract to be written for purposes of enabling PTO personnel and the public to determine quickly from a cursory inspection the nature and gist of the invention. Such a requirement has been met by the revised Abstract as filed in the Preliminary Amendment on July 31, 2001. Accordingly, withdrawal of this objection is respectfully requested.

The disclosure has been objected to because of informalities as indicated on page 3 of the Office Action (Paper No. 9). Accordingly, the disclosure has been carefully reviewed and revised, where appropriate, to overcome the objection.

Claims 4-5 and 13-16 have been rejected under 35 U.S.C. §112, 1<sup>st</sup> ¶, as containing subject matter which was not described in the specification. In particular, the Examiner asserts that the specification does **not** teach "what exactly the two dimensional information is". The Examiner sets forth an example of confusion, that is, "claim 4 claims that it is its distribution along an optical axis and a scan direction of the laser beam, while figure 8b (which the specification states is two dimensional information) shows it to be containment size versus quality." Actually, contrary to the Examiner's assertion, page 18, 1<sup>st</sup> paragraph; page 22, 3<sup>rd</sup> paragraph; and page 24 2<sup>nd</sup> paragraph; page 37, 3<sup>rd</sup> paragraph which relates to FIG. 16; and FIG. 42, 2<sup>nd</sup>

paragraph which relates to FIG. 21 of Applicants' disclosure (see substitute specification filed on July 31, 2001) all expressly describe the two-dimensional distribution of fine particles over the wafer surface. For example, page 22, 3<sup>rd</sup> paragraph of Applicants' disclosure describes with reference to FIG. 1 and FIG. 5, that,

"In this embodiment, the galvano-mirror 25 is used to scan the entire wafer surface. The computer 61 uses a galvano driver 29 to send a scan signal to the galvano-mirror 25 so that the beam is scanned while detection signals and images of the back-scattered light from the fine particles at scan positions can be captured in synchronization with the operations of the galvano-mirror. This provides an understanding of the two-dimensional distribution over the wafer surface, as shown in Fig. 8(a) and Fig. 8(b), in addition to the fine particle positions on the wafer's front/back axis."

Likewise, page 24, 2<sup>nd</sup> paragraph of Applicants' disclosure further describes with reference to FIG. 1 and FIG. 5, that,

"Also, since backscattering detection is performed in this embodiment, the illumination and detection optical systems can be formed as a single unit. This allows easy attachment and adjustments and provides a compact apparatus for detecting fine particles. Also, since backscattering detection is used, the illumination beam can be rotationally scanned in a horizontal direction, thus allowing the two-dimensional distribution of fine particles to be easily understood."

In view of the foregoing explanations and reference to Applicants' disclosure, Applicants submit that the term "two dimensional distribution information" as defined in claim 4 and its dependents is fully described in the original disclosure, and respectfully request that the rejection of claims 4-5 and 13-16 under 35 U.S.C. §112, 1<sup>st</sup> ¶, be withdrawn.

Claims 1-23 have been rejected under 35 U.S.C. §112, 2<sup>nd</sup> ¶, as being indefinite and narrative for reasons stated on pages 6-7 of the Office Action. In response thereto, claims 1-23 have been amended to overcome questions of ambiguities and to place all claims in condition for allowance.

Claims 1, 2, 6-12 and 17-23 have been rejected under 35 U.S.C. §102(e) as being anticipated by Nakata et al., U.S. Patent No. 6,355,570. As previously discussed, Nakata '570 has been incorporated by reference into Applicants' disclosure as a parent application since Nakata '570 is Applicants' earlier work product that is also assigned to the same assignee of the instant application, and that has a common co-pending term. In view of such an incorporation, Nakata '570 can no longer be used against Applicants' claims 1, 2, 6-12 and 17-23. As acknowledged by the Examiner, there is **no** disclosure from Nakata '570 pertaining the use of "two dimensional distribution information of fine particles" and that such "two dimensional distribution information of the particles" can be obtained by respectively detecting scattered lights from different portions along an optical axis of the illumination light (laser beam) on a wafer (substrate). For purposes of expedition, each of Applicants' base claims 1, 7, 10 and 17 has been amended to define how the back scattered light, which is scattered at different portions along an optical axis of the illumination light (laser beam) on the wafer (substrate) is detected in order to obtain information. As amended, Applicants' base claims 1, 7, 10 and 17 are clearly distinguishable over Nakata '570, and are believed in condition for allowance.

Lastly, claims 24-25 have been newly added to alternatively define Applicants' disclosed invention over the prior art of record. These claims are believed to be

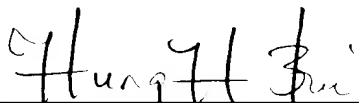
allowable at least for the same reasons indicated with respect to dependent claim 3.

In view of the foregoing amendments, arguments and remarks, all claims are deemed to be allowable and this application is believed to be in condition to be passed to issue. Should any questions remain unresolved, the Examiner is requested to telephone Applicants' attorney at the Washington DC area office at (703) 312-6600.

To the extent necessary, Applicants petition for an extension of time under 37 CFR §1.136. Please charge any shortage of fees due in connection with the filing of this paper, including extension of time fees, to the Deposit Account of Antonelli, Terry, Stout & Kraus, No. 01-2135 (Application No. 501.39474X00), and please credit any excess fees to said deposit account.

Respectfully submitted,

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Attachments

FIG.24

